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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,364	04/19/2004	Tsuyoshi Maeda	119292	1081

25944 7590 01/30/2006

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EXAMINER	
TRAN, LONG K	

ART UNIT	PAPER NUMBER
2818	

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/826,364	MAEDA, TSUYOSHI
	Examiner	Art Unit
	Long K. Tran	2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *October 20, 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-9* is/are rejected.

7)☒ Claim(s) *5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 3-5 in the reply filed on October 20, 2005 is acknowledged. The traversal is found persuasive; therefore, claims 1-9 are all considered in this office action.

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed on April 19, 2004.

Information Disclosure Statement

3. This office acknowledges of the following items from the Applicant:

Information Disclosure Statement (IDS) filed on April 19, 2004.

The references cited on the PTO -1449 form have been considered.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims **1 – 4, 7, 8** and **9** are rejected under 35 U.S.C. 102(b) as being anticipated by Hisatake et al. (Hisatake, USPN 5,434,690).

Regarding claim **1**, as shown in Figs. 1A and 1B, Hisatake discloses a liquid crystal display device, comprising:

a pair of substrates 11 and 12;

a liquid crystal layer 20 disposed between the substrates 11 and 12;

common electrodes 13(13a) in the form of stripes arranged on an inner surface of one of the substrates, substrate 11; and

pixel electrodes 14, having a generally rectangular shape, arranged on an inner surface of the other substrate 12;

the liquid crystal layer 20 including liquid crystal molecules M with negative dielectric anisotropy, which are vertically aligned in an initial state (col. 9, lines 19-46); and

outer edges of the pixel electrodes 14 being positioned inside or outside of corresponding outer edges of the common electrodes 13 so that tilt directions of the vertically aligned liquid crystal molecules M are controlled as shown in Figs. 1B, 13B, 13C, 14B, 14C, 15B and 15C (col. 10, lines 15-26).

Regarding claim **2**, Hisatake discloses that tilted electric fields are produced between the pixel electrodes 14 and the common electrodes 13 by positioning the outer edges of the pixel electrodes inside or outside the corresponding outer edges of the common electrodes, so that the tilt directions of the liquid crystal molecules are controlled depending on the tilted electric fields (col. 9, lines 6-56 and col. 18, lines 5-34).

Regarding claim **3**, as shown in Figs. 1A and 1B (annotated), Hisatake discloses that slit apertures 13 b and 14b (non-conductive sections) are provided on the pixel electrodes 14 and the common electrodes 13 that control the tilt directions of the vertically aligned liquid crystal molecules M (col. 9, lines 6-56), and

the outer edges of a pixel electrode 14a having at least one of outermost apertures 14b within one pixel that are positioned outside the outer edges of the common electrode 13a,

Regarding claim **4**, Hisatake discloses the apertures 13b, 14b being provided on both the pixel electrodes and the common electrodes, and being alternately arranged on different electrodes.

Regarding claim **7**, Hisatake discloses that a black matrix is formed over the entire area of the non-pixel sections (col. 25, lines 56-59); accordingly, the black matrix is disposed between neighboring dot areas (or non-pixel regions), and the black matrix is disposed outside the outer edge of one of the pixel electrode 14 since the outer edge of the pixel electrode 14 belongs to the pixel region. And, as shown in Fig. 19 of Hisatake, the common electrode 13 has the outer edge being positioned inside that of the pixel electrode 14.

Regarding claim **8**, Hisatake discloses two-terminal nonlinear elements being coupled to the pixel electrodes (column 20, lines 52 – 67).

Regarding claim **9**, Hisatake discloses that an electronic apparatus comprises the liquid crystal display device described above (col. 1, lines 7-9 and col. 33, lines 1-10).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim **6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hisatake et al. (Hisatake, USPN 5,434,690) in view of Kubo et al. (Kubo, USPN 6,452,654 B2).

Regarding claim **6**, Hisatake discloses the claimed invention of claim 1 except for each of a plurality of dot areas including a transmissive display area for transmissive mode and a reflective display area for reflective mode; and adjusting layers being disposed between at least one of the pair of substrates and the liquid crystal layer, and at least in the reflective display area, the adjusting layer being disposed for varying a thickness of the liquid crystal layer between the reflective display area and the transmissive display area as cited in the instant claim.

However, at first, as shown in Fig. 52, Kubo discloses a liquid crystal display device incorporating an active element MIM 37 (or two-terminal nonlinear element) (col. 13, lines 3-7) and a pixel electrode 38 (semi-transmissive reflection film) comprising a transmissive display area for transmissive mode and a reflective display area for reflective mode (col. 2, line 18-34).

Further, as shown in Fig. 29, Kubo discloses an adjusting layer 170 (insulating layer) disposed between the lower substrate and the liquid crystal layer in the reflective display area 160R, wherein the adjusting layer 170 is disposed for varying a thickness of the liquid crystal layer between the reflective display area 160R (as thickness dr) and the transmissive display area 160T (as thickness dt) (col. 3, lines 21-26 and col. 27, lines 53-63).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display device of Hisatake with the teaching of Kubo by forming a plurality of dot areas including a transmissive display area for transmissive mode and a reflective display area for reflective mode; and adjusting layers being disposed between at least one of the pair of substrates and the liquid crystal layer, and at least in the reflective display area, the adjusting layer being disposed for varying a thickness of the liquid crystal layer between the reflective display area and the transmissive display area, in order to efficiently utilize ambient light and light from a

Allowable Subject Matter

8. Claim **5** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is an examiner's statement of reasons for the indication of allowable subject matter: Claim **5** is allowable over the prior art of record because none of the prior art ( ) whether taken singularly or in combination, especially when these limitations are considered within the specific combination claimed, to teach:

the outer edges of the pixel electrodes being positioned at distance L (fig. 7) approximately W/2 inside or outside the outer edges of the common electrodes, where W is the width of at least one of an aperture and a protrusion.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long K. Tran whose telephone number is 571-272-1797. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LKT

January 26, 2006